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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,973	02/17/2004	Emmanuel Sedda	GRY-117US	9088
23122	7590	01/20/2006	EXAMINER	
RATNERPRESTIA			ESHETE, ZELALEM	
P O BOX 980			ART UNIT	
VALLEY FORGE, PA 19482-0980			PAPER NUMBER	
			3748	

DATE MAILED: 01/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

**Office Action Summary**

Application No.

10/779,973

Applicant(s)

SEDDA ET AL.

Examiner

Zelalem Eshete

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-17 is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

This Office Action is in response to the RCE filed on 12/19/2005.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5,7,8 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsai et al. (6,308,667).

Regarding claim 1: Tsai discloses valve actuator for internal combustion engines (see figure 1), comprising at lease one electromagnet having coil and a magnetic plate whose movement controls the displacement of the valve (see figure 2), wherein the parameters of the electromagnet and of the plate are such that at least part of the magnetic circuit formed by the electromagnet and the plate is a state of magnetic saturation when the magnetic plate is in the proximity of the electromagnet, so as to minimize the force of attraction exerted on the plate and therefore its velocity, the parameters of the electromagnet and of the plate and the shape of the plate being such that the magnetic circuit is in the state of magnetic nonsaturation when the plate is located at a distance from the electromagnet, so as to maximize the force attraction

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exerted on the plate and therefore to minimize the switching time wherein the plate has flat faces (see figures 2,3).

Regarding claim 2: Tsai discloses the parameters are such that at least part of the magnetic circuit is in the state of magnetic saturation for an air gap between the plate and electromagnet of between 0 mm and at most 1 mm, in that Tsai's disclosure relate to the range of air gap that includes the first few millimeters which inherently include the first millimeter (see figure 3, column 4, 17 to 37).

Regarding claim 3: Tsai discloses the parameters of the electromagnet and of the plate comprise parameters related to at least one of the shape, the dimensions of the plate, the nature of the material forming the plate and the body of the electromagnet and the intensity of the current flowing through the coil of the electromagnet (see figures 2,3).

Regarding claim 4: Tsai discloses the thickness of the plate is such that this plate is magnetically saturated in the proximity of the electromagnet (see figures 2,3).

Regarding claim 5: Tsai discloses the magnetic plate has at least one contracted part intended to be saturated when this plate is located in the proximity of the electromagnet (see figures 2,3).

Regarding claim 7: Tsai discloses a regulator controlling the current in the electromagnet (see figure 7; column 5, line 65 to column 6, line 7).

Regarding claim 8: Tsai discloses the internal combustion engine comprising at least one valve (see figure 1).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsai in view of Rookes et al. (5,992,821).

Tsai discloses the claimed invention as recited above; however, fails to disclose the material forming the plate has a lower saturation threshold than the material forming the body of the electromagnet.

However, Rookes teaches the material forming the plate has a lower saturation threshold than the material forming the body of the electromagnet (see abstract). Rookes further teaches that such arrangement improves the performance (see column 2, lines 60 to 67).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tsai's device by providing materials for the plate and the body of the electromagnet as taught by Rookes in order to improve the performance as taught by Rookes.

***Allowable Subject Matter***

5. Claims 9 to 17 are allowed.

***Response to Arguments***

6. Applicant's arguments filed on 10/18/2005 have been fully considered but they are not persuasive.

7. With regard to the claim limitation directed to "saturation": Tsai discloses the device feature that is attributed to "saturation" as discussed in applicant's disclosure (see figure 2 in light of applicant's disclosure paragraph 0036,0037 and see figure 3 in light of applicant's disclosure paragraph 0038).

8. With regard to the functional recitations: Tsai discloses a device that is capable of performing the functions as discussed above. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429,1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169

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USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

9. With regard applicant's argument on page 6: Applicants argument, "when one compares figure 3 of Tsai and figure 4 of the present invention, one sees that for the significant air gap, the operation is the same in the case of the present invention", is irrelevant as long as it is not reflected in the claim language.

10. With regard to applicant's argument on page 7: The primary reference discloses the claim language related to the "saturation" as recited above. The secondary reference is relied only for its teaching of the claimed material property. It is well known that the magnetic permeability describes the magnetic property of a material.

### ***Conclusion***

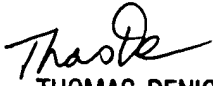
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zelalem Eshete whose telephone number is (571) 272-4860. The examiner can normally be reached on Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Zelalem Eshete  
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Art Unit 3748

  
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